Re: *JSLS.* 2014;18:211–224. Robotic-Assisted Versus Laparoscopic Colectomy: Cost and Clinical Outcomes

Dear Editor,

In the April-June 2014 edition of the *Journal of the Society of Laparoendoscopic Surgeons*, Davis et al[1] published a comparison of clinical and economic outcomes for colectomies between standard laparoscopic and robot-assisted procedures. This study included >25 000 segmental colectomies, of which about 2% were carried out robotically. Robotic procedures showed a significantly higher economic burden and lengthened operative times. No differences were found in major, minor, and surgical complication rates.

The paper was read with great interest because of the shortage of published, well-conducted cost analyses regarding abdominal robotic surgery. Nevertheless, I would widen the debate by adding some reflections to discuss some economic aspects of robotics in clinical practice.

In general, the economic burden of robotic-assisted surgery is quite high. It must be acknowledged that economic issues are important when the purchase and maintenance of a robotic system per se are contemplated. However, the actual economic impact on surgical practice should be comprehensively evaluated, including several indirect aspects.

First, given that only 1 robotic system is currently available, it is likely that less expensive models will be marketed in the future. This is an issue that should be considered over time. Second, one of the most interesting and innovative features of robotic surgery is digitalization of the operative view. An obvious benefit is the depth perception provided by 3-dimensional systems, but there are many more advantages, including the capability of simultaneous visualization of both the operative field and additional sources of data, such as an ultrasonographic video. This allows not only a very precise understanding of anatomy and vascularity but also more linear dissection maneuvers. In considering such aspects, the possibility of reducing the proportion of major procedures and avoiding intraoperative iatrogenic injuries has already been investigated in.[2,3] Finally, as it has been hinted by the authors, it would be interesting to evaluate not only inpatient outcomes but also the impact of functional outcomes over the long term. With oncologic colorectal surgery in particular, which typically requires precise dissection and fine movements, robot-assisted surgery may result in safer nerve-sparing procedures and better functional outcomes.[4] It is acknowledged that the management of postoperative functional disorders is usually associated with a substantive economic impact on public health.

I congratulate Davis et al[1] on their elegant and timely analysis. However, in the future, further and more comprehensive research is needed. Such research would provide a more precise measure of the actual economic impact of robotically performed surgery on clinical practice.

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